List of added explanations relative to the anterior art

Pp 1 - 11

Epigraph :

One day, the storm pushed the sailor's boat on a high bottom. Up to this day, he has used the same oar, well anchored to the side of his embarkation, to produce in the water a wake and a push, both in speed. One day, the sailor understood that not only the piece of wood which made up his oar didn't have intrinsic meaning, and that it could be used in a whole other way. He changed the oar of sides and anchored it this time in its joint, and propped up the sleeve on the high bottom and served himself of the other extremity, the paddle, to activate it. ***He has transformed his oar into a lever.***

But the sailor's boat had its share of damages. He accosted at an island and undertook it's reparation. With the aid of his hammer he replaced his mast in a straight line. To stabilize it, he had to remove nails from the carcass and plant them at his foot. To do this, he changed the direction of his hammer and ripped out the nails. He transformed an object producing speed into an object producing leverage power. He has displaced by inversing the slow and fast movements of the same rigid piece, and has produced for it a new meaning...

In the same manner, the universal geometric shapes, squares, triangles, ellipses with which we have produced rotary machines, have been used in a well determined dynamic, a rapid dynamic but without force, can see their meanings change and allow the production of more powerful machines

Foreword : Fields of the invention

The anterior art of motor machines before Wankle

We can certainly say that the rotary motor machines are born from trial and error, and experimentation. More particularly for retro rotary machines, which we have named so for the displacement of their paddle in opposite direction of that of their crankshaft, we easily perceive that the cylinder paddle are issued from the simplified expression, at its limit, of an external gear, supported by a crankshaft and coupled to an internal gear. The retro rotary machines represent in fact the limit case in which the number of teach of each of the gears is different only by one. In this limit case, all the teeth are always touching all the teeth.

Following this limit simplification, inventors, such as Coley, Fixen, Mallard and many others, have not only enounced that the primitive forms such as triangles, squares, ellipses, could be cylinder and paddle forms, but also, that the dynamic, in unique belonging, and which seemed the most obvious for these figures was that which materialized the gear coupling structure mentioned beforehand.

These researchers have also brought to light a less empirical aspect of these machines, which consists in what, always while conserving the retro rotary aspect of the paddle movement on its crankshaft's crankpin's axe, that we could reduce the speeds of this sub movement and thus create a new class of machines, being post rotary machines, which we have thus named since,

when observed from the exterior, the movement of their crankshaft is in the same direction of the paddle. (Fig1 of the Foreword)

In these two figure cases, the cylinders and paddles have a rounded aspect, and the segmentation is realized on the points of the cylinder. The segmentation of the sides is thus complicated by the fact that the pistons enter and exit successively of their cylindrical cavity. These two elements produce a deficient segmentation and premature wearing out of the machine.

Wankle's contribution

Wankle's contributions are of three orders. Firstly, we owe him a more extensive indexing of machines existing at his time, an indexing which we can find in his patent titled : Einteilung der rotationskolbenmachinern number XP002204164.

In what concerns more specifically the inventive aspect, we mainly owe him, from the point of view of compressive machine parts, to have cut off segmentations on the machine's cylinders, and proposed the segmentation on the paddle's points, more specifically for post rotary machines. (fig 1 of the foreword). Afterwards, Wankle has elutriated this type of segmentation and has put in series the types of figures which were issued.

From a mechanical point of view, we owe to Wankle two support methods or of mechanical paddle guidance in such a way so that it can work autonomously, without cylinder support. This is the method which we have named by mono induction, as well as the method which we have named by intermediate gear. Note that it's the first of these two methods is still used in a commercial manner by motorists who use rotary technology (Fig II of the Foreword)

Major dynamic, compressive, and mechanical Wankle difficulties

We can enounce that in the machines of the anterior art, we have succeeded, with only two motor elements, being the paddle and the crankshaft, to produce a rod effect, similar to that which we have encountered in piston machines. In fact, in rotary machines of the anterior art, the paddle realizes virtually something which the movement is more similar to the rod of a piston machine than to a piston. In these machines, in fact, the explosion is realized not only at the peak of the crankshaft's course, but in addition, at the summit of the rectification and the ascent of the paddle. The compression and deconstruction are thus similar to that of piston machines (Fig II of the Foreword).

The segmentation type of Wankle machines forces literally and in a manner where we can't clear, so to speak, a horizontal use of the paddle, and in this sense that the explosion will occur on its sides and not at its extremities. The compression as well as the deconstruction will thus be very limited to the only ascents and descents of the paddle. In relation to machines of the anterior art, the securisation and segmentation translates itself, already at this first level of analysis, by a net loss of torque.

But there is more, the securisation of segmentations by the points also has devastating effects on the capacity of compressive volume of machines. The new location of the segmentation, limiting

the ascent of the paddle, renders the retro rotary machines inapt to realize an appreciable compression with an acceptably longer crankshaft. In fact, by having cut off these, the elevation by rectifation of the paddle, the crankshaft doesn't suffice, except in the case of cylinders shaped in eight, with triangular paddle to realize an acceptable compression simultaneously to a length of crankshaft minimally correct.

The group of retro rotary machines has thus, by this manner of acting, purely and simply been scrapped. For this same reason, the group of post rotary machines, other than the well known eight shaped cylinder and triangular paddle also become useless for the same reason.

The segmentation of the paddle points thus reduces considerably the versatility of various rotary machine figures.

Secondly, as the paddle must rectify horizontally and not vertically, the push to and from it is always unequally shared on the paddle. In the two Wankle mechanics, there is always an opposition between the two opposite parts of the paddle, one acting in force and the other in counter force. We find here one of the main causes of friction and overheating of these machines, since a part of the explosive force is used as counter movement of the machine and must be cancelled by another part of the explosive force, and this even before positively serving of the third of the resulting force (Fig II b of the Foreword)

Lets thus at that the rod effect is not simply lost on the compression level, but also on the mechanical level, whereas machines of the anterior art, as in the piston machines, the rod arms itself on the side of the cylinder to add to the descending movement of the crankshaft a lateral dimension, the arming of the mechanical Wankle system, centralized, separates literally the push in force and counter force.

The lateral support push, the armament, is not realized on the sides any more, but rather in the center of the machine, and it follows that it looses all lateralization capacity. There is consequentially a strong eloquent counter direction, since, by mere essence, the lateral push, in a rotary machine should be superior to the descending push in them, towards the center.

We must also add that the only two Wankle mechanics, by mono induction and by intermediate gear, produce in opposite ways their deficient effects of forces and counter forces.

It is more important to note here that the deficient conception of these machine dynamics, when they're realised in a post rotary manner, and in addition when this dynamic is realised during a segmentation by the paddle points accompanies it almost automatically of mechanics having for object to realize these dynamics, and consequentially of mechanics being themselves deficient.

This is why, when we will speak here of post rotary and retro rotary machines, we'll speak simultaneously, from the mechanical point of view of mono inductive machines. In fact, the great difficulty of these machines is to work positively on only one side of the paddle, and this is why we say that they are retro rotary or post rotary. This converging idea, once again, with the mechanics which support them, mono inductive mechanics. In fact, in the mechanic by mono induction, the forwards part of the paddle goes though an accelerative force, whereas the back part undergoes an accelerative force, whereas the back part undergoes a negative force. Inversely,

in the mechanic by intermediate gear, it's the rear part of the paddle which produces a force, and the forwards part a negative, counter force. In addition, in the case of mono inductive mechanics, we have a double central pivot, which contradicts the rational capacity of the machine. In either case, we produce a slow-retro dynamic on their rapid centers, and we realize but the energies on the remaining paddle parts, non-submitted to the counter forces and to the forces necessary for its cancellation (Fig III c of the Foreword)

We then need to add to these problems, inherent difficulties to the fact of having centered the problematic on the post rotary machine class. In them, there is a counter direction in what that the paddle must turn slower than the crankshaft, not only from the fact that it is overcommanded, but also from the fact that we ask from the paddle an effect opposite to that of its explosive impulsion: we ask it to slow donw. A final problem lead by this dynamic vision consists in that the expansion is very long, being of three quarters of a turn in relation to a half rotation for piston engines. The favorable coupling angle thus forges itself long after the explosion.

Once again, these mechanical difficulties are directly issued from the fact that in these two mechanics, the mono inductive realization method of the mechanical support, the paddle always being rigidly attached to the mechanical support induction gear. This will of inspiring ourselves of gears, and reducing machines to only two parts leads in addition the deprivation, this time of the most important geometries. The machine is conceived dynamically from a conception according to which the cylinder curve is realized from a slow retro circular orientation of the paddle, realizing itself on the basis of a quick post circular positional movement of the crankshaft. It is of the most important matters to say that this way of doing only has meaning for retro rotary explosion machines with perpendicular paddles, and that when they are applied to other machines, the effects are devastating.

This illusion, taken from the empirical realization of retro rotary machines which we have commented on at the beginning of this matter, shows that we have forced the machines, even post rotary ones, to obey to a retro rotary conception, in other words in the manner of retro rotary machines, or in other terms, in retro planetary movement of the paddle on its own eccentric.

In summary, if Wankle's contribution has allowed a more liable segmentation, *has in addition been one of the most negative*, on all the mechanical levels. We can in fact suffice ourselves, when we intend on producing a motor machine of only two parts, the paddle and the crankshaft, if the paddle expresses the rod, we then have a virtual rod and crankshaft. But we can't, as Wankle did, propose without cutting off important qualities, propose machine genders with only two parts, in the measure where the complementary part of the crankshaft is integrable to a piston.

The proposed generation of rotary machines

It seems obvious that the goal of the current invention will be to produce a third generation of rotary machines, which the qualities will be to allow machines with an adequate segmentation, for example in the paddle points, but this time by realizing fully a virtual *rod effect*, which will take the form, later as subsidiary crankshafts, of poly crankpins of polycammed gears, by chained

hoop gear, of clockwise dynamic, and so forth (Fig. 87 and 88) In other words, we'll show here that it is fully possible and realizable to produce machines which the entity of the compressive surface will work positively, and even for certain cases, in a perfectly distributed manner, on each side of the paddle, as if it was the head of a piston. This is why we'll name these machines bi rotary, or machines with bi rotary tendencies.

We'll show that these results will be issued from new manners to conceive the hidden dynamic of the paddles, and that a large group of mechanics can allow us to realize them. Generally, these mechanics will have positive orientational and positional capacities, and more often differentiated and realized by combined and redistributed mechanics. This is why the notion of bi rotary machine, on a compressive level, will often accompany a poly inductive machine denomination, for the mechanics, or even of second or third degree machines.

We'll thus show that we can use in a totally different, more appropriate way the natural forms; triangles, ellipses, squares to produce cylinder and paddle forms for retro rotary machines, but this time by giving them a completely different mechanico dynamic meaning in such a manner so that they restore the entity of the explosive power. We'll show that to achieve this, we'll however need to totally change our way of seeing the deep dynamic of these machines. The goal of the durrent invention will thus be to show how we can reinstall the rod effect in rotary machines, all while conserving a paddle segmentation by it's points.

All the machines of the previous art are conceived in such a manner as to realise a hidden movement of the paddle which consists of a slow rotary peripheral orientation movement, producing itself on the basis of a fast central post rotary positional movement (Fig IV a,b of the foreword). As we have said, if the paddle realizes the rod artificially, and that the machine realizes its high compression, which is the case in retro rotary machines with cylinder segmentation, this type of dynamic can be appropriate. We'll show in the following pages that we'll need to modify our vision completely, our conception of the intrinsic paddle dynamic, when it receives the segments, and that the compression produces itself on its horizontal face.

We'll thus show not only that many other machine dynamics are possible, leading to new paddle movements and cylinder shapes, but also that, for standard cylinder shapes, new dynamics can be defined. But it is understood that all these dynamics will receive, in the following pages, a vast corpus of mechanical expressions.

More concretely, we'll shows that we must add to the *slow peripheral/quick central* interior movement conception of rotary machines, the main movements following.

- Slow-quick peripheral // quick central (mechanic by hoop gear, and by chain gear) (Fig. 21.1 and 21.2)
- Slow peripheral // quick central retro/post (mechanics by combinatory inductions in subtraction) (fig 25.3)
- Amorphous peripheral movement//quick movement/slow movement (method by poly induction) (Fig. 18.1 and 18.2)
- Alternative peripheral lateral arc movement/central circular movement (differential semi-turbine) (Fig. 52, 52, 56)

- Alternative lateral peripheral straight movement (peripheral piston machines) (Fig. 69.1)
- Perpendicular alternative straight movement//central circular movement (poly turbine) (Fig. 60.1)
- Double planetary movement)(poly turbine) (Fig. 60.1)
- Peripheral elliptical movement//central circular accelero-decelerative movement (slinky piston machine) (fig. 68)
- Quick central movement//slow central movement, in the same direction or opposite (circular rotary machines with clockwise movement) (Fig. 82, 83)
- Slow accelero-decelerative peripheral movement (polycammed machines, with rounded or rectangular cylinders) (Fig. 51.1, 51.2)
- Double sinusoidal movement (peripheral rotary machines) (Fig. 73)
- Slow exterior circular movement and accelero decelerative rotary center movement (anti turbines) (Fig. 71)
- Combination of movement and counter movment (planetary rotor cylinder machine) (Fig. 75)
- Slow accelero-decelerative peripheral movement//quick central (Fig. 77.1)
- mouvement lent accéléro-décélératif périphérique // rapide central (Fig. 77.1)

All these movements represent better ways to extend the real conceptual movement of the paddle in such a way as to produce with it energy in a manner to not, so to say, use the machine under its compressive form, but rather as its motor form. By these movements, the triangles, ellipses, squares, octagons of the previous art aren't used with a center in speed and a center armament, but rather with a lever capacity, and an off-centered armament or centered but dynamic.

As for the mechanical point of view, we'll shows, in first case that it is possible, all while remaining in the same slow on quick dynamic that characterizes machines of the previous art, that it is possible to artificially and virtually produce the rod effect. The main mechanics which will allow these realizations are the mechanics said:

- by hoop gear, perticularly when realised with chain (Beaudoin) (Fig. 21)
- by semi transmittive mechanic (Fig. 20.1)

We'll demonstrate afterwards that the realization of machines with parts supported by combinatory induction assemblies, restores, in diverse manner the rod effect of machines.

The main induction combination methods are:

- of subtracted manner (Fig 25.3 ,)
- of layered manner(Fig. 85.1 et all)

Afterwards, we'll show that the method by poly induction already commented by ourselves in our previous works, leads with it, not only a new mechanic but, in addition a new dynamic orientation of the part movement conception, as well as the original type of comprehension of division of the paddle movement.

We'll thus comment on the reintegration of the rod effect

- by polycrankpin and planetary rotor cylinder (Fig.75.1 75.2)
- by clockwise paddle movement/rotational cylinder (Fig. 82 , 83)

We'll show that the more vertical realization of machine movement is assured stronger from the method by poly crankpin.

Finally, more particularly for this type of clockwise paddle motion dynamic, we'll show that not only the time division according to the model of poly induction assures the machine it's whole power, but also that this division is now reparted laterally, horizontally, which wellos not only to cut off totally all known defaults up to this day in rotary machines, butin addition, to add more fundamental qualities to these machines, approaching them to turbine machines. We think mainly about qualities such as the total absence of acceleration and deceleration of all piece of the machine.

This dynamic abolishes totally the pertinence of the type of dynamic of machines of the previous art, in which we have conferred to the paddle a slow, retro rotary, counter movement on the basis of a quick central post rotary movement.
On the contrary here, the paddle at its full power and the cylinder, by its rotary movement, opposite to that of the paddle realises the rod effect.
The machines don't comprise any more acceleration or deceleration of the pieces, because the push is total on all of the paddle and in addition, is opposite between it and the cylinder.

The machine here preconcised in all its possibilities is thus a machine which reintegrates the rod effects, cut off by Wankle, all by conserving the assets relating to the segmentation, knowing the possibility to segment the machine by its points.

Exposition method

For a better theoretical comprehension of the current invention, we have followed a line differentiating machines depending on their virtual induction degree which they generally require for their realization.

It is evident that in all the movements previously defined will be translated by a mechanical combination method, and that in most of the cases, the paddle won't be directly connected to the first induction, to the slow induction.

It's begining from this fact that we have been able to classify a large group of machine depending on the number of movments, and consequentially the number of inductions necessary to their realization. We have established the classification by taking in account the number of general inductions required to produce a machine. For example, the conventional figure can suffice them with one induction. They are first degree machines, figuratively. We can however produce them with two induction degrees, making them of second degree mechanically. As for poly turbines, they are second degree machines, but since they generally require two inductions, but can be

realized with more inductions. Finally, for example, we can cite metaturbines, which require generally three inductions. We must note that we can also realize first degree machines with more than one induction, as we can artificially reduce the number of inductions of second and third degree machines.

This general method will allow us to identify uncountable mechanical, dynamic, and cylinder form combinations, allowing simultaneously a large and versatile rational classification of all motor machines, in which the machines of the previous art will constitute a part of the first degree machines, realizing the slow peripheral dynamic, and quick center dynamic.

P. 37, 38, 39

Summary of mechanical Relevance of first degree

As we have already mentioned, we have preferred exposing the contents of this disclosure by a classification process, starting from first degree machines towards superior degree machines. It is important to bring up a parentheses relative to the mechanical contributions of each part of the current disclosure realizes, for more pertinent mechanics.

As we have mentioned in the foreword, the mechanics by mono induction and by intermediate gear flow directly from a dynamic conception of rotary machines from which the paddles are in a slow peripheral retro movement, in relation to a quick central positional action. In addition, the realization of the compression by the horizontal part of the paddles, combined to the centralization of the anchoring of machines, divide the paddle into parts realizing forces and counter forces which destroy the power of machines.

In this first part, we have added many methods allowing the realization of machines all while conserving intact the paddle and cylinder forms. Certain of these machines thus remain, even with new methods, mono-rotary, and mono inductive.

We tend however to specify that already in this section, that we can say, all while conserving the paddle and cylinder forms, we have demonstrated that we can produce machines, which on the mechanical level are poly inductive, or poly mechanical. In all these machines, we reintegrate a larger totality of the compressive work surface of the paddle.

This is what happens principally in the following machines (fig. 88)

a) The mechanic by hoop gear, mainly with chain : in this mechanic, the negative effect which should have been located in front of the paddle is countered by the lateral cord effect of the gear and or of the chain and is transformed into vertical effect. We thus have a paddle which acts positively on all its length. In fact, in the method by hoop gear, particularly when realized with a chain, the slow retro rotary dynamic of the paddle is blocked by the effect of the cord of the chain and is consequentially automatically transformed into slow movement, this time peripheral offensively. This back part of the paddle benefits of its retro rotary push since it's the case of an induction realized by observation of the crankshaft, but the front part doesn't produce an orientation counter push, because it has been transformed into positional push.

b) In the mechanic by polyinduction, mainly when the induction gears are set up in the sides, and when it has been realized semi tranmittively, the armament around a unique incline is realized in course of descent, which allows a work on the totality of the paddle, which the bi mechanical and bi inductive quality of the machine.

c) The method by poly induction characterizes fundamentally a dynamic by quick peripheral amorphous paddle movement, and slow central movement. More particularly when realized with support areas in the sides, allowing a descending anchoring, and a paint effect around it. The push on the paddle is thus total, which is the desired effect of the current invention.

d) In the mechanic by combination of subtractive inductions, or said as deported gear attack, the retro rotary capacity of the paddle, countering the power of the engine is submitted to the descending capacity of the paddle, the length of its range being superior to that of the retro rotation. Consequentially, the machine is bi rotary and bi inductive, since it works positively on the totality of the paddle.
In the mechanic by free hoop gear, the rear part of the paddle is supported by the support gear of a mechanic, and the forward part of the induction gear of a second mechanic. The central pivot point of the paddle is thus displaced and the crankpin of the machine realizes a longer range, these mechanics reducing simultaneously the counter forces. The resulting is a bi rotary and bi mechanical machine.

f)In the method by semi transmission, the support gear is dynamic and absorbs positively the descent of the back part of the paddle. In this method, we don't look to simply control offensively the movement of the forwards point of the paddle, but also to control offensively the rear movement of it. The double dynamic of the paddle is thus produced. This double dynamic is realized effectively by the forwards movement of the eccentric and the retro rotary movement of the dynamic support gear.

These mechanics previously presented correct these defaults since they correct the hidden dynamic of the machines.

In all methods by mechanical combination of exterior or interior observation, the paddle isin't fixed to the center induction gear, but rather to the sub induction inductive gear. The dynamic conception of this version is of slow retro rotary conception, on quick retro rotary and quick post rotary. In all these cases, the negative orientational power of retro rotation, leading the paddle in opposite direction finds itself not only reduced but in addition, which is very important, inferior to the power of positional push.

Following, there is thus a positive push on the totality of the paddle, which is the effect searched for in the current scenario.

We'll note in addition that the methods by dynamic support gear, here in periphery, in both combination methods, or at the center, in the method by semi transmission, could serve, as we'll see further, to realize machines with clockwise movement, which the paddle is perfectly bi rotary.

P. 55, 56

Summary of second degree mechanical relevance

This second part has put in light that there exist certain types of cylinders in which the geometric dynamic can't be submitted simply to the vision mono planetary of the previous art, and consequentially, can't have their compressive parts realised only by first level mechanics, as Wankle for example. Mainly, we can for poly turbines, differential, bi rotary and bi mechanical semi turbine machines.

This section has thus put in additional light that it is possible to inspire ourselves of machines to produce machines which the cylinder of the primary forms is modified in such a manner as to bring it bi rotary forms, and by means of consequence, bi rotary mechanics. The main realizations of this section can thus be summarized:

a) We can mention firstly that the realization of the poly induction with the addition of geometric rods and active support gears reduces substantially the resulting counter forces in this type of machine. On one behalf, the elongation of the sleeve of the superior induction in such a way so that it's range is larger than the diameter of the induction gear which will assure that the descending force will always be superior to the counter force. In addition, the addition of an active support gear will increase the force of descent of the back of the paddle.

b) In addition, the layered combination of inductions allows the ascent and the rectification of a peripheral induction, all while reducing the penetration in the corners, all while increasing the deconstruction during the descent, and shit, all while allowing that this be the horizontal surface of the paddle which is exposed to the explosion. This solution, which allows a vast group of multi-mutational mechanical possibilities (Fig. 85) has for effect to make possible the positional displacement of the non circular paddle, and consequentially, makes possible a stronger malleability in the conception of the cylinder. In addition, this layered mechanical conception, in addition of making appear the notion of peripheral dynamic support gear, allows us to realize a stronger systematic deconstruction, with effects of appreciable angulations and leverage of the crankshaft. This solution, in which the paddle isn't fixed on the first induction level, gives place to amorphous paddle dynamics/quick retro//slow center. Instead, it gives place to the surplus, by non circular positional displacement of the paddle, to new more appropriate cylinder forms which allow to reintegrate the retro rotary machine in a possible feasibility.

c) As for the method by polycammed gears, they allow the realisation of the machine in part oscillatorily, by adding to the retrorotary orientational movement of the paddle a sinusoidal variant allowing to create, in relation to the crankshaft, accelerations and decelerations which will allow to attenuate the dead point, to soften the cylinder surface and consequentially increasing the radius of the crankshaft. The use of polycammed gears leads in addition of new, rounded, rectangularised, cylinder forms, allowing to subutilise the desired compression quantum. (Fig. 50, 51)

P. 66, 67
Recapitulation

We can conclude from this first section that the type of dynamic of the previous art, issued from the experience of gear coupling, is a type of dynamic in which, as much for retro rotary machines as post rotary machines, the paddle is a retro rotary planetary with slow orientational movement on a quick positional movement, being realized by the crankshaft. Thus, this type of dynamic is valid only when machines are realized with vertical paddle expansion, in other words, at the ends of the paddles. In all other circumstance, particularly during the expansion with compression of the paddle horizontally, this type of dynamic leads a set of negative effects caused by the centralization of the armament and the division of the paddle in parts realizing force and in parts realizing counter forces.

We have demonstrated that we can realize positively compression machines on the horizontal parts, all while continuing to attach directly to the paddle the machine's induction gear, in the measure where have realized a neutralization of counter forces by methods such as the method by semi transmission, by hoop gear, by chain gear, or by polycammed gears.

We have also demonstrated that we could create the expression of a rod by an orientational subalternate induction, the paddle being thus attached to this induction. The main figure case are the poly induction, the combination of induction with subtractive induction, and the layered combination induction.

In this final case, the induction gear is either de multiplied, either dynamically and peripherally. In these machines the paddle has a more amorphous role, similar to that of a conventional piston engine piston, and the mechanical action is mainly fulfilled by the inductions, which restores the rod effect.

The following matters will have for object to show, strong homogeneity and of variability of the mechanical group which we have just exposed, that the post rotary, retro rotary and rotary types of machines, can consequentially be realized by various compression figures, which all are supported by this same mechanical set.

We'll thus show the complexity of the paddle or paddle structure movement can be reduced by using pistons, in periphery, vertically (poly inductive rotor cylinder machines), in horizontal periphery (horizontal piston rotor cylinder machine), central (central explosion machines), or even with a circularo-rectilinear course (slinky machine).

From another perspective, we'll show that poly inductive machines can also have diverse paddle conceptions, thus realizing peripheral paddles (poly inductive paddle machines with rotor cylinder), by traction paddles (poly inductive traction machine), by differential paddles (poly inductive differential machine), by central paddles (Central paddle machine).

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Summary of mechanical relevence of machines with combined movements

As we have demonstrated, motor machines of conventional figures can't be reduced to merely a slow peripheral retro rotary and quick central dynamic.

In this final section, we have well demonstrated that the figures of machines can't be limited to machines in which the sub movement is strictly rotational.

A larger and more versatile view of motor machines shows that many movement combinations allow to the realization of the dynamic of certain compressive parts, and, afterwards, of this comprehension, can be mechanized correctly.

We can thus summarize in the following manner the diverse types of machine movement, and the machines which they allow to create. General rule, since these machines enter intheir combination of their movement non circular sub movements, either for example rectilinear, or accelero-decelerative, they generate new dynamics and new figures, which the main are the following:

a) *Poly turbines in which the paddle movement is elliptical, and constituted of a perpendicular alternative rectilinear movement, on a central post active movement, these machines being of the second mechanical degree (fig. 62)*
b) *The differential semi turbines, which the paddle movement is an alternative peripheral arc, on the basis of a central post rotary movement. (fig. 56)*
c) *Peripheral piston machines, which the piston movement is a horizontal alternative movement at the basis of a central post rotary movement. (Fig. 69.1*
d) *Slinky piston machines, which the pistons realise a combination of elliptical peripheral movements on the basis of a central circular movement. (Fig.68)*
e) *Anti turbine machines which the peripheral movement is circular on the basis of a central elliptical movement, or sinusoidal. (Fig. 71)*
f) *Metaturbines, in which the movement comprises two circular peripheral layers (Fig. 14)*
g) *Poly crankpin and poly compressive part machines, which the movement of the paddles and pistons are opposite (Fig. 75 et 77.2)*
h) *Peripheral rotary (Fig. 73)*

It is evident tat the unitary first degree mechanics can't adequately realize the support of these more complex dynamics, in which enter in combination movements not only non-circular, but also irregular in speed.

All the previously exposed mechanics by oursevles enter in composition to realise movement composition of these machines of second and third mechanical and dynamic degres.

P 75

Summary of the section relative to clockwise movement machines

Clockwise movement machines are thus the most perfect bi rotary and bi mechanical machines. They are different in two fundamental ways from machines of the previous art. Dynamically, they are issued from a poly inductive cutting off, from a quick post rotary peripheral cutting off on a slow post rotary center. Then, this decomposition is redistributed in such a manner so that the slow movement is placed horizontally and opposite to the quick movement. Other than the regularization in movement of opposite direction, the clockwise dynamic always respects the ratios of the poly inductive dynamic. In fact, contrarily to realize a mechanic in function of the ratios of the number of paddle and cylinder sides, as it is the case with planetary vision mechanics; it realizes a mechanic, as the poly inductive mechanic, in function of the number of arcs. In all cases, for each complete paddle rotation, the cylinder will act in number of rotations of one on the number of sides of its arcs.

Expressed in relation with conventional mechanics, we could say that the rotation ratio will always be equal to the rotation of the paddle, observed from the outside, cancelled and transported on the cylinder in relation to an interior observation, we could say that the retro rotation or the cylinder rotation will be equal to that of the additional or subtractive retro rotation which will be necessary for the paddle for it has the same de-rotation quantum as the crankshaft has of rotations, which we'll also give to the cylinder.

We can thus carry out a calculation from any observation, the result will always be the same in the realization of a rotation ratio or of a retro rotation of the cylinder/rical similar to the poly inductive vision, of one on the number of cylinder arcs. The clockwise dynamic is thus new, as much as a bi rotary mechanic, as a poly inductive mechanic and as a dynamic redistributed oppositely.

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Summative of the foreword figures

P. 88

Figure 75.2 shows the combination of the figure 75.1 for one turn of the machine

P 90 , 91

Fig 87 shows comparative power of our machines in relation to the prior art

Figure 88 resume the principal birotative power of our machines

and Detailed description the foreword figures

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Figure 75.2 shows the combination of the figure 75.1 for one turn of the machine

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Figure 82.2 shows a realization a the figure 82.1 with the utilization of polycamed gearing

P 127

Fig 87 shows comparative power of our machines in relation to the prior art

Figure 88 resume the principal birotative power of our machines

Note :

To respect the opinion of first PCT observations, the first 29 claims of the initial application haven't been modified .

Clains 1 - 29 of the first application

Claim 1

A driving machine, for which the movement of the compressive parts is irregular and the one of the driving parts is circular and regular, this definition excluding the machines known in the prior art, such as the conventional piston engines, the orbital piston engines, mechanized in a standard way with a linking connecting rod, the post rotative engines, with paddles having three or four sides when they are mechanized in a mono inductive fashion.

Claim 2

A machine as defined in Claim 1 for which the compressive parts are pistons which each inserted in a sliding action in cylinders, in line, or in orbital disposition and for which the means of linkage between the pistons and the cylinders are one of the following:

- a free connecting rod.
- A sliding way.
- A flexible connecting rod.
- A dynamical oscillating cylinder
- A mechanical induction

Claim 3

A machine as defined in Claim 1, for which the compressive parts are participating in the mechanical movement, cylinders and pistons being arranged in a rotor cylinder and defined as 'a rotor cylinder machine' and for which the pistons are linked to a crankshaft or to an eccentric by one of the following linking means:

- a free connecting rod.
- A sliding way.
- A flexible connecting rod.
- A dynamical oscillating cylinder
- A mechanical induction free connecting rod.

Claim 4

A driving machine, as defined in Claim 1, for which the driving parts are the paddles, these paddles being arranged in a rotative manner in the cylinder of the machine and which are linked by:

- by straight alternative line.
- By rotation of the eccentric or the crankpin of the machine

These two actions being controlled by the mechanical induction.

Claim 5

A machine as defined in Claims 1 & 4, for which there is one more side on the paddle than the number of sides on the cylinder, this machine named 'post rotative machine'.

Claim 6

A machine as defined in Claims 1 & 4, for which there is one side less on the paddle than the number of sides on the cylinder, this machine named 'retro rotative machine'.

Claim 7

A machine as defined in Claims 1 & 4, for which the sides of the paddle are linked together, becoming a paddlic structure, for which the total number of sides of this structure is always double the number of sides on the cylinder, this machine named a 'poly turbine machine'.

Claim 8

A machine as defined in Claims 1 & 4, for which the sides of the cylinder are successively unequal and alternatively equal, these machines forming a generation of machines named 'meta turbine machines'.

Claim 9

A machine as defined in Claims 1 & 4, for which the compressive parts, when checked by an exterior observer, are moving in the same way, but in a lower speed than the driving parts, named 'post rotative machines'.

Claim 10

A machine as defined in Claims 1 & 4, for which the compressive parts when the machine is checked by an exterior observer, are moving in the opposite way from the driving parts, and named 'retro rotative machines'.

Claim 11

A machine as defined in Claims 1 & 4, for which one of the driving parts, when observed by an exterior observer, is moving simultaneously in the same way as the compressive parts and the other one is moving the contrary way, the driving action of the machine being assured by both inductions, this machine being named 'bi mechanichal machine'.

Claim 12

Claim 13

A machine as defined in Claim 1, for which the compressive parts are supported by a post-rotative mono induction, this method being defined by the following elements, arranged together:

- a crankshaft being mounted rotatively in the machine.
- A external type support gear fixed solidly in the side of the machine.
- A compressive part, such as a paddle equipped with an internal type of gear, named 'induction gear', fixed in the cylinder and on the eccentric of the crankshaft, in such a way that the induction and support gearing will be coupled.

Claim 14

A machine as defined in Claims 1 & 13, for which the parts are supported by retro-rotative mono induction, in which the support gearing is of an internal type and in which the induction gearing of the paddle is of an external type.

Claim 15

A machine as defined in Claim 1, for which the support method of the compressive part is named 'poly induction method', this type of induction being defined by two complementary planetary inductions to which the compressive part is attached.

Claim 16

A machine as defined in Claim 1, for which the support method is called a 'hoop gear', this gear being of an internal type coupling the induction and support gears together.

Claim 17

A machine as defined in Claim 16, for which the 'hoop gear' is replaced by a chain.

Claim 18

A machine as defined in Claim 1, for which the induction and support gears are undirectly coupled by means of an external gear, named 'intermediary gear'.

Claim 19

A machine as defined in Claims 1 & 18, for which the gear coupling the induction and support gears is composed of internal and external gears, named 'hoop-intermediary gear'.

Claim 20

A machine as defined in Claim 1, for which the hoop gear is not directly coupled to the induction gear but to a link gear instead, itself being coupled to the paddle induction gear from the front or backside.

Claim 21

A machine as defined in Claim 1, for which the support gear is activated by the crankshaft, but indirectly by the means of semi-transmission, this method being named 'semi-transmittive method'.

Claim 22

A machine as defined in Claim 1, for which the support and induction gears are of an internal type and are indirectly coupled by means of a link gear, these support and induction gears being arranged in a juxtaposed or stacked way, these methods being named 'internal juxtaposed gears method' and the second being named 'internal stacked gears method'.

Claim 23

A machine as defined in Claim 1, for which the support and induction gears are of an external type and are coupled by on or by a set of two gears arranged in the heel of the crankshaft, this method being named 'heel gearing support method'.

Claim 24

A machine as defined in Claim 1, for which the induction gear of the paddle of an external type is coupled to an active central gear, activated in an indirect way by means of an accelerative semi-transmission of the crankshaft, this method being named 'active central gearing method'.

Claim 25

A machine as defined in Claim 1, for which the paddle is equipped with an induction gear which is coupled directly to two or more gears, for which one of the gears activates the orientational aspect of the paddle, this method being named 'paddle hoop gearing method'.

Claim 26

A machine as defined in Claim 1, for which the paddle is supported by a paddle hoop gear, mounted on a set of gears for which its center of rotation is eccentric, this set of gears being mounted rotatively on axes that are fixed rigidly in the machine, this method being named 'gearing structure method'.

Claim 27

A machine as defined in Claim 1, for which the paddle is equipped with fixed axes, coupled in an eccentric way to induction gears, these induction gears being also coupled to a support gear, this method being named 'eccentric gear method'.

Claim 28

A machine as defined in Claim 1, for which the positional aspect of the paddle is controlled by an eccentric rotatively activated in the center of the paddle and in which the orientational aspect of the movement of the paddle is controlled by a second periphiric method, this second peripheric method being activated by the coordination of one of the methods described previously, this method being named by centrallo peripheric support method.

Claim 29

A machine as defined in Claim 1 , for witch the paddle induction gear is of an external type , and is coupled to a an active support central gear, activated by and an indirect mean such as an accelerative semi transmission of the crank shaft , this method called by central active gear .

New set of claims

1-30 new
31 to end the same